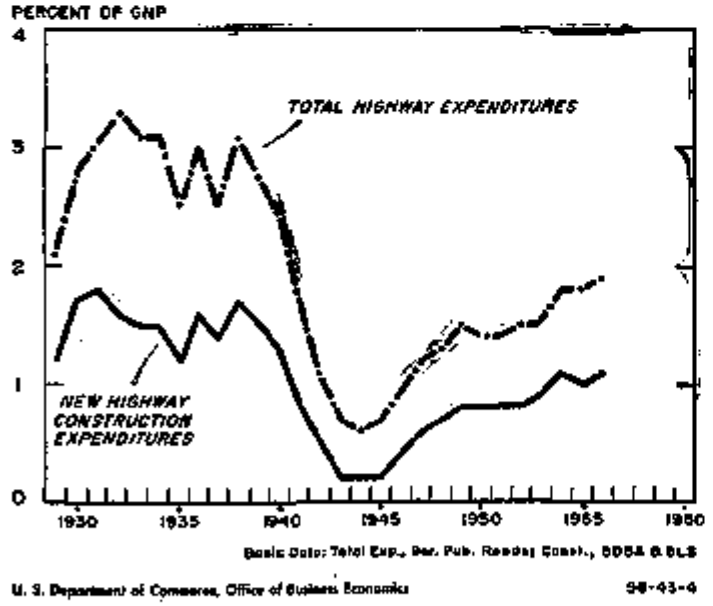
by L. Jay Atkinson and Edmond L. Kanwit ☆

Economic Aspects of the New Highway Program

RAPID growth in motor vehicle registrations and highway travel since World War II has brought serious congestion, especially in and around large cities. Marked expansion of highway construction in recent years has not been of sufficient scope to take care of accumulated needs and expanding requirements. Only in the last 2 years have capital outlays for highways approached the proportion of total gross national product that they accounted for in prosperous prewar years.

With the Highway Act of 1956, the Federal Government has undertaken a long-term program of increased assistance to the States which will provide (1) large and expanding allocations for a mainly Federal-financed interstate system linking the principal cities, and (2) a stepped-up allocation for the regular Federal aid program on a 50–50 matching basis.

Highway Spending as a Percent of Gross National Product



For the Interstate system the act authorizes a total of nearly $25 billion of Federal funds over the next 13 years for the 90 percent or more of total cost to be borne by the Federal Government. The State matching requirements will add another $2.5 billion plus small sums for previous authorizations not yet spent.

NOTE.—MR. ATKINSON AND MR. KANWIT ARE MEMBERS OF THE CURRENT BUSINESS ANALYSIS DIVISION, OFFICE OF BUSINESS ECONOMICS.

For the regular Federal aid program, which is on a 50–50 matching basis, Federal authorization of $2.5 billion for fiscal years 1957, 1958, and 1959 will require about an equal authorization from State funds. Authorization of regular Federal aid has not been specified after fiscal year 1959.

Actual spending under the program is expected to exceed the above totals because of funds to be made available but not yet authorized. Federal-aid funds for highway construction through 1972 are estimated at $38.5 billion. Together with required State matching funds, more than $50 billion will become available for cooperative Federal-State interstate and regular aid projects over the duration of the program.

Perhaps the dimensions of this program are more readily grasped in terms of annual rates rather than of total long-term costs. Spending, including State matching funds, on Federal-aid highway projects has risen from less than $1 billion in 1952 to nearly $1.7 billion in 1956. It is expected to rise to $3 billion within a few years, reaching $3.5 billion by 1965, and to continue rising to around $4 billion in the final stages of the program, on the basis of projected trust fund receipts, which control Federal expenditures under the act.

The purpose of this article is to examine some of the broad economic effects of the expanded roadbuilding program and to assess the implications of the financing provisions upon economic activity in the general setting of past trends in highway financing and construction.

Recent highway expansion

Despite rising outlays for highways throughout the postwar period, road building in the first several years after the war was quite inadequate in comparison with the growing traffic. It was 1948 before current dollar spending reached prewar rates, and as late as 1952 the volume of construction adjusted for price changes was still below the prewar rate. By 1952, however, vehicle-miles of travel were more than 50 percent above the prewar peak.

In more recent years a substantial expansion has taken place in the volume of highway construction—an expansion that is a very important element in appraising the new highway program. In the past 4 years the volume of highway construction, adjusted for cost changes, has increased by two-thirds.

This sharp rise in the real volume of highway construction is attributable to (1) a substantial rise in Federal aid matched by State funds, (2) an upsurge in toll road construction financed largely by special bond issues, and (3) a stabilization through mid-1955 in road construction costs which enabled rising receipts available from road user taxes to purchase increased road construction.

Between 1952 and 1956, Federal-aid spending nearly doubled, rising $400 million, with a slightly smaller rise in State matching expenditures. In the past 2 years, the con-

tinued increase in matching funds required most of the increase in State highway funds available for construction, and little expansion occurred in independent State and local road construction other than toll roads. As shown in table I, the largest increase was for toll roads, outlays for which increased almost $1 billion between 1952 and 1956.

Table I.—Major Highway Disbursements

[Billions of dollars]

Type of disbursement	1952	1953	1954	1955	1956 p	Change 1952–1956
Total disbursements	5.4	5.9	6.9	7.3	8.1	2.7
Capital outlays	2.9	3.3	4.0	4.3	4.9	2.0
Free highways	2.7	2.9	3.2	3.4	3.8	1.1
Federal-aid projects 1	1.0	1.1	1.2	1.4	1.7	.8
Non-Federal aid	1.7	1.8	2.0	2.0	2.1	.4
Toll facilities	.2	.4	.8	.9	1.1	.9
Noncapital outlays	2.5	2.6	2.8	3.0	3.1	.7
Maintenance	1.6	1.7	1.8	1.9	1.9	.3
Administration and police	.4	.4	.4	.4	.5	.1
Interest and debt service	.5	.5	.6	.7	.8	.3

p Preliminary estimate. 1. Includes direct Federal expenditures.

Source: Bureau of Public Roads.

The New Highway Program

The principal program objective of the Federal Highway Act of 1956 is the completion of the National System of Defense and Interstate Highways, a 41,000-mile Interstate System of high-speed expressways spanning the continent and providing main interconnecting routes between the major population and production centers of the Nation and with Mexico and Canada. All but about 7,000 miles of the network will be of divided highways of 4 or more lanes with controlled access and no grade crossings.

The general locations of the original routes were defined by the Bureau of Public Roads in 1944 and designated by Congress in 1947. Through 1954, however, the Federal Government had specifically authorized the expenditure of only $400 million for the system.

Thus the interstate program is not literally new, but the scale of operations is vastly increased, and a number of provisions in the act represent modifications of previous Government policy. First with the increased funds provided by the new act, the share of the Federal Government in meeting capital outlays for all highways will rise substantially above the current one-fifth. Second, to assure completion, a long-term superhighway construction program was authorized with most of the cost to be borne by the Federal Government. Third, Federal taxation and highway spending were linked. Specified existing and new taxes related to motor vehicles are to be paid into a highway trust fund out of which all future Federal expenditures of major highway funds will be met. Spending may not exceed anticipated annual receipts, except from accumulated surpluses in the fund.

Finally, though not a change from past policy, the amount of funds authorized for regular Federal highway aid was increased beginning in fiscal 1957 from the $700 million previously authorized to $825 million, and to $850 million in 1958 and to $875 million in 1959.

Basic Federal-State highway relationships were not altered. The State highway departments build, maintain, and operate most main-traveled through routes in the United States. Responsibility for initiating the projects, and for planning, constructing, maintaining and policing the highways remains with the State highway departments. The Federal Government through the Bureau of Public Roads establishes standards of highway engineering to meet anticipated traffic volume on the interstate system for 20 years ahead. Controlled access to most of the superhighways is one of the basic standards of the interstate network.

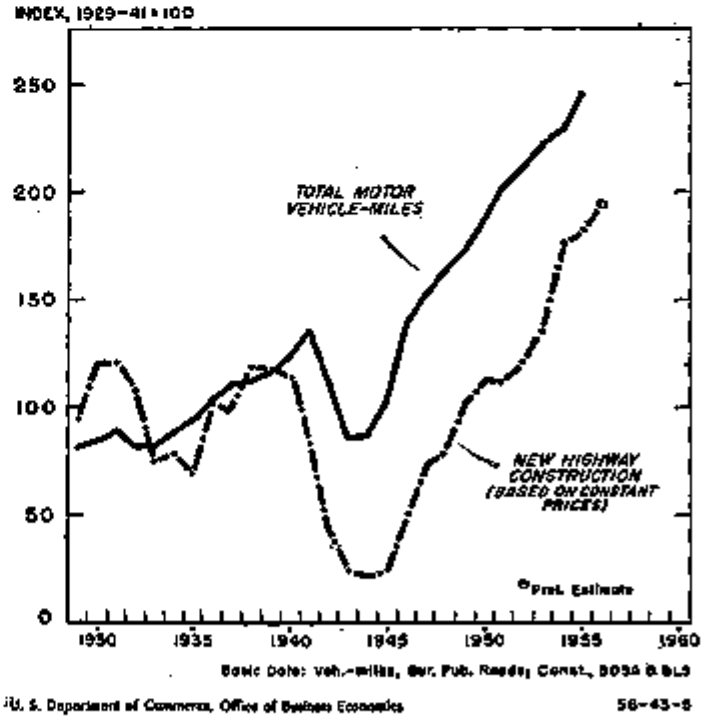
Financing the program

One of the distinctive features of the Federal Highway Act of 1956 is the earmarking of specified excise taxes related to motor vehicles to be placed in a trust fund out of which Federal aid will be financed on a long-term basis on a strict pay-as-you-build policy. Although most of the States have earmarked highway user taxes for highway spending, the Federal Government had not previously followed such a practice.

An important implication of the method of financing chosen is that Federal-aid spending both for regular aid (50–50 matching basis) and for interstate aid will be limited to receipts of the trust fund account from previously existing taxes as well as from new taxes levied. In the first few years of the program, collections are expected to exceed expenditures, providing a reserve from which spending may exceed current collections during later years as the spending program expands.

The law provides that allocations for the interstate program are to be reduced or deferred when it appears that spending of Federal funds may exceed the resources of the trust fund account. On the basis of the projection of trust fund receipts, shown in the chart on page 24, assuming regular Federal aid to be maintained at the rate authorized for fiscal year 1959, this provision is estimated to stretch out the period of the completion of the interstate program beyond the 13 years designated, perhaps to 16 years, under

Highway Construction and Vehicle Travel



the assumption of constant costs projected. Accordingly the new taxes are designated to remain in effect until 1972.

The new taxes

The highway trust fund will derive two-thirds of estimated receipts from the motor fuel tax which was raised from 2 cents to 3 cents per gallon as of July 1, 1956. Motor-fuel consumption is estimated to increase by a constant amount annually during the period of the program. This is equivalent to about a 4 percent annual rate currently and a declining relative rate in the future. The growth in motor fuel consumption has been considerably above 4 percent in recent years when the number of motor vehicles in use has increased rapidly.

The other principal auto-related taxes to be placed in the fund include (1) a tax on tires, which was raised from 5 cents to 8 cents per pound, (2) an existing tax on inner tubes of 9 cents per pound, (3) a new tax of 3 cents per pound on tread rubber used in recapping tires, (4) a new tax of $1.50 per 1,000 pounds annually on trucks registered for gross weights exceeding 26,000 pounds, and (5) an excise tax of 5 percent on the manufacturers' price of new trucks, buses and trailers. The existing manufacturers' excise tax on commercial vehicles was 8 percent of which 3 percent was scheduled to expire in April 1957. The 3 percent was retained and increased by 2 percent, making 5 percent of the manufacturers' price eventually to be placed in the trust fund out of a total of 10 percent collected on new commercial vehicles after July 1, 1956.

Although Federal highway spending is tied to specific Federal excise taxes for a long-term program, some flexibility was introduced for several aspects of the highway program through periodic appraisals and special reports to aid Congress in the determination of policy on several problems.

One such problem was the formula to be used for apportioning funds among States. For the first 3 years, interstate funds are apportioned among the States on a basis of the current formula based on population, land area, and road mileage. Thereafter Congress declared its intent to allocate funds beginning in 1960 on a basis of needs to complete the interstate network.

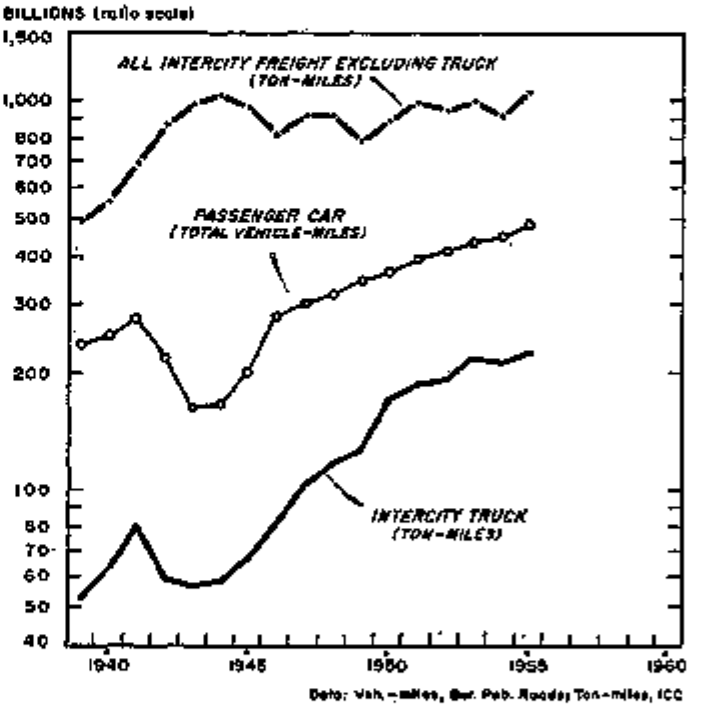
The complex and difficult issue of reimbursing the States for work already done to acceptable standards on freeways and toll roads on designated interstate routes was not resolved. Congress requested a report from the Secretary of Commerce in January 1958 to aid it in determining reimbursement policy on roads constructed to interstate standards after August 2, 1947, including possible incorporation of toll roads on interstate routes into the free highway system.

For the Interstate System, Federal-aid financing of the freeways is in marked contrast to the typical State financing of toll roads largely by borrowing. The transition in financing is already under way: The issue of new toll road bonds had dropped sharply and the new Federal excise taxes were imposed beginning July 1, 1956. From the highway users' standpoint, the toll roads are available for a special charge upon those using the roads usually of 1 cent to 1½ cents per mile for passenger cars and up to about 4 cents per mile for large trucks, which is equivalent to an added gasoline tax of 15 to 20 cents per gallon for passenger cars and trucks. For the interstate freeways the rise in user imposts is much smaller—an increase of 1 cent per gallon for gasoline is the principal new revenue source—but it is placed upon all motor travel rather than upon the 20 percent of the traffic on the interstate network. Another difference is that the new user charges are levied from the date of the act rather than from the time of completion of the new road as in the case of toll projects.

Role of Federal Government

The allocation of special funds for a limited mileage of high-capacity interstate roads represents a modification of the previous policy of distributing Federal aid rather widely over an expanding system. The highways designated as eligible for Federal aid have reached about one-fifth of total highway mileage, and account for 65 percent of vehicle miles and more than 90 percent of the value of State highway construction other than toll roads. Despite their broad application, Federal funds have financed only about 20 percent of highway capital budgets since World War II. Increasing fiscal responsibility of the Federal Government for road construction is indicated by the doubling of regular Federal aid in recent years, by the large rise in interstate aid provided under the new act, and finally by the expected drop in toll roadbuilding from the peak rate of over $1 billion attained in 1956.

Trends in Motor Vehicle Travel and Freight Transport



Prior to the Highway Act of 1956 the Federal Government levied certain excises related to automobiles including motor fuel taxes as a part of the general tax structure. Federal spending on highways was not correlated with the yields of these excises. During the depression years Federal Government highway spending was stepped up as a general countercyclical measure to supplement State and local highway construction as shown in the chart on page 24.

For the decade 1931–40, Federal aid to highways, including nonmatching relief expenditures, was substantially in excess of Federal receipts from auto-related excise taxes. During the war period, Federal motor fuel and other automobile excise taxes were increased but Federal spending on highways declined to a low rate and, after the war, expanded rather slowly in comparison with the general rise in prices and

expansion in economic activity. Federal highway expenditures then leveled off during the Korean defense period coincident with a rise in the Federal gas tax. Throughout the period from the beginning of World War II through 1954 Federal highway spending was appreciably smaller than receipts from Federal motor fuel taxes. Increased aid to the States in recent years had brought Federal spending about equal to motor fuel taxes collected just prior to enactment of the new Highway Act and the creation of the highway trust fund.

Highway construction costs

In general, highway construction costs have risen less than building construction costs since the end of the war. Highway costs advanced sharply during the war and through 1948. From that time through 1955, they showed considerable fluctuation but at the end of the period were little higher than at the beginning, in contrast to the sustained advance in general construction costs. Note that this cost stability occurred during a period of broad expansion in roadbuilding. In the past year and a half, however, highway costs have been on the upswing, rising an estimated 12 percent, with the rise in the third quarter of 1956 reaching 3.8 percent.

Substantial changes in construction costs, however, are not ordinarily matched by proportional changes in tax rates. State revenues for highway purposes have been derived mainly from specific user taxes, the most important of which is the motor fuel tax. Between 1940 and 1955, when highway construction costs more than doubled, the average State tax on gasoline increased only from around 4 cents per gallon to 5.35 cents per gallon.

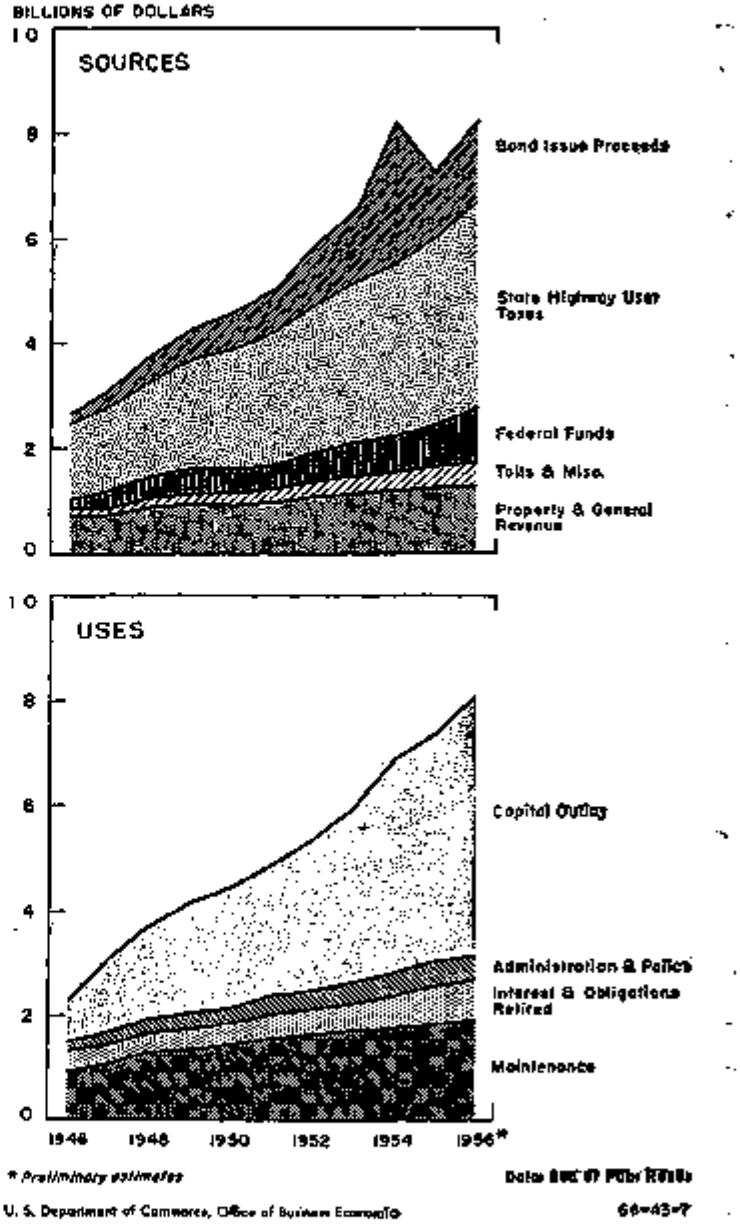
A combination of influences appears to account for the upward thrust in highway costs since mid-1955. The continued expansion in roadbuilding has occurred at a time when strong demand pressures are present in the economy as a whole, and the volume of other types of nonresidential construction has been increasing. Under these circumstances, wage costs and materials prices registered a considerable advance. Sharp price rises have taken place in key highway materials such as cement, structural steel shapes, and fabricated structural steelwork. Although most highway construction costs have trended upward for more than a year, the increase in costs of bridges and other structures related to highway use has been particularly sharp.

Though present requirements are large, the tapering off in toll road building and the necessary preliminary planning steps in getting the new interstate program underway will moderate the immediate requirements for materials and equipment. The stretching out in highway expansion in the next 2 or 3 years will tend to prevent an intensification in materials shortages which have occurred at times in the past year and a half of rapid rise in road construction. Steady development of more efficient and larger-capacity equipment, and improved construction procedures in the past have restrained highway construction cost in relation to general construction cost.

Reappraisal of needs and costs

Regular appraisal of the financing of the program on the basis of actual tax receipts was directed by the act which calls for successive estimates of cost of work remaining to be completed on the Interstate System. Current cost estimates of the interstate program represent the 1954 survey of the Bureau of Public Roads and allowance for 2,300 miles of urban bypasses and radials. They do not include the later addition of 1,000 miles of costly urban routes. Moreover, highway construction costs have increased perhaps 10 percent since the time of the original cost estimates. The Bureau of Public Roads now has underway a new cost survey of the Interstate System in particular and overall highway needs in general.

Sources and Uses of Highway and Street Funds



Another study calls for an analytical comparison of the costs of providing highway facilities for the various classes of motor vehicles with the benefits obtained by their owners, and by other groups. This report is to furnish Congress guidance for determination of equitable rates of taxation on highway users and other beneficiaries. A related problem concerning recommendations on maximum sizes and weights of vehicles on public highways is also the subject of a special report.

The Toll Road Movement

The postwar toll road movement in the United States originated in the inability of many States and other governments concerned to provide sufficient funds to construct the modern multilane, controlled-access highways needed on the main intercity through routes. Available revenues had to be widely dispersed throughout the State and could seldom be concentrated as the heaviest traffic required. Some States had restrictions on borrowing and others were unwilling to borrow the large sums required for these routes. Controlled access on existing improved routes was generally lacking, or difficult to obtain so that growing local traffic impeded through traffic.

Toll roads, therefore, appeared to be the solution for inadequate revenues, restraints on borrowing, and uncontrolled highway access. Where traffic seemed heavy enough and alternate highway routes inadequate, the toll road authority was able to issue bonds, backed either by a pledge of toll receipts and gasoline or other road-user revenues. The system was especially applicable to the densely populated States in the Northeast and Midwest. Pennsylvania, New Jersey, New York and Connecticut—and later Massachusetts, Ohio, and Indiana—constructed the major toll highways. Only a few hundred miles have been built west of the Mississippi and in the South.

Table 2.—Changing Status of Toll Roads

	Status in miles as of Nov. 1	
	1955	1956
Miles completed	1,713	2,282
Under construction or financed	1,515	962
Authorized	3,633	3,250
Proposed	1,333	1,017
Total mileage in all categories	8,196	7,309

Source: Bureau of Public Roads.

In the postwar years, about $4 billion has been spent on toll roads, bridges, and tunnels. As of November 1, 1956, almost 2,300 miles of toll routes were in operation and another 1,000 miles were under construction. More than 3,200 additional miles have been authorized, and a further 1,000 miles proposed. Changing circumstances related to the new highway program have resulted in the abandonment of a number of authorized and proposed projects during the past year (see table 2).

The volume of credit financing for toll facilities was down sharply in 1955 and 1956 although capital outlays continued to move upward through 1956, as shown in table 3.

Even before the passage of the Highway Act the backlog of toll road construction began to decline. Moreover, interest rates had advanced, narrowing the economic margin between potential toll revenues and operating costs.

At the time the Highway Act was passed in mid-1956, contract awards for toll construction projects for the first 6 months of the year were already 37 percent below the same period of 1955. The new Highway Act by providing 90 percent of construction costs from Federal funds on toll-free interstate routes is expected to supplant many of the contemplated toll projects along routes not yet under actual construction. Toll bridges, tunnels, and other crossings may be built if they become free once the State-acquired debt has been paid. In other cases, toll crossings will continue to be constructed, as in the New York area, where extreme traffic density justifies them.

Earnings on toll roads have generally increased during the past year although toll road bonds have had a varied experience on the market. Several of the well-established systems have been doing well in toll receipts while some of the extensive systems have been in use too short a time to judge their financial position.

Table 3.—Toll Facility Financing and Capital Outlays

[Millions of dollars]

	Proceeds from bonds received by toll facility agencies	Capital outlays
1947	20	20
1948	261	22
1949	110	85
1950	173	190
1951	251	284
1952	591	184
1953	815	433
1954	2,102	832
1955	564	887
1956[1]	710	1,077

[1] Estimated. Source: Bureau of Public Roads.

In order to avoid duplicate costs and waste of resources, competing highways will not be constructed along interstate routes now served adequately by toll facilities. Eventual incorporation of the toll roads and reimbursement policy remain to be determined.

Benefits of Improved Roads

Tax receipts going to the highway trust fund are collected from all highway users. Where superhighways have been built, they have generally resulted in a marked increase in property values along and adjacent to the new routes. Additions of both service establishments and industrial facilities capitalize on the use of improved highway transportation. New stores, shopping centers, factories, and recreation facilities have brought new tax revenues to the communities served, and new business opportunities and employment to the inhabitants of the entire area. Since only a limited number of these highways have been built, the adjacent sites now possess unique advantages. With a nationwide program, an opportunity for more balanced growth will be provided. The locational advantages of a few routes will probably be less pronounced but the gains will be more widespread.

The rapid growth in facilities with access to improved transportation routes is not all net growth. To the extent that traffic is merely diverted, less advantageously located businesses will lose some patronage. On the other hand, improved transportation will speed up travel and generate new traffic. It will provide better facilities to keep pace with the general growth of the economy, and accordingly much of the new capital investment which is either dependent on or closely related to highway transportation will be located near the new expressways where much of the increase in traffic is expected to occur during the next two decades.

Potential savings from better transportation

The economic loss sustained by the highway user in man-hours and vehicle-time lost in traffic delay, fuel waste, engine, tire and brake wear, and in costs of injury and property damage, all increase with traffic congestion. Comparisons of accident rates on controlled-access routes built to high safety standards with those on parallel routes with random access indicate that the accident rates have been halved and fatalities cut by two-thirds. The money savings in such reductions in accidents will be substantial as suggested by current premium payments of around $4.5 billion for highway accident insurance. The nonhighway user also will benefit from cheaper and faster transportation, and share in community and property gains. Congress, in seeking to place the expense of highway improvement on the groups which obtain the gains, has requested the Secretary of Commerce to undertake an investigation of this question.

The metropolitan area and the central city

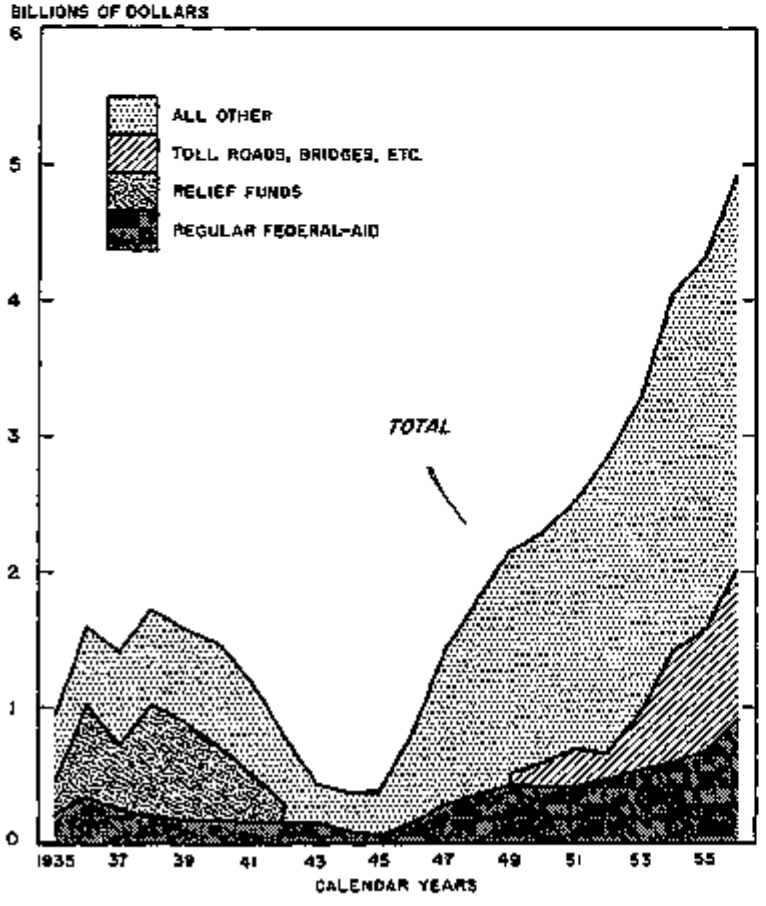
The rapid growth of surburban areas has been built largly on automobile transportation and has created some of the worst current highway congestion where intercity, commuting, and local business traffic converge. Despite growing employment opportunity in the suburbs, concentration of business and employment has remained in the central city.

The Interstate System will provide through-routes which will allow rapid penetration to the heart of the city for both local and intercity traffic, bypasses around the metropolitan fringes, and radial routes from the hubs of urban congestion. Much through-traffic will be removed from crowded city streets. Traffic surveys indicate that this will reduce congestion substantially in small and intermediate size cities and only moderately in the larger cities.

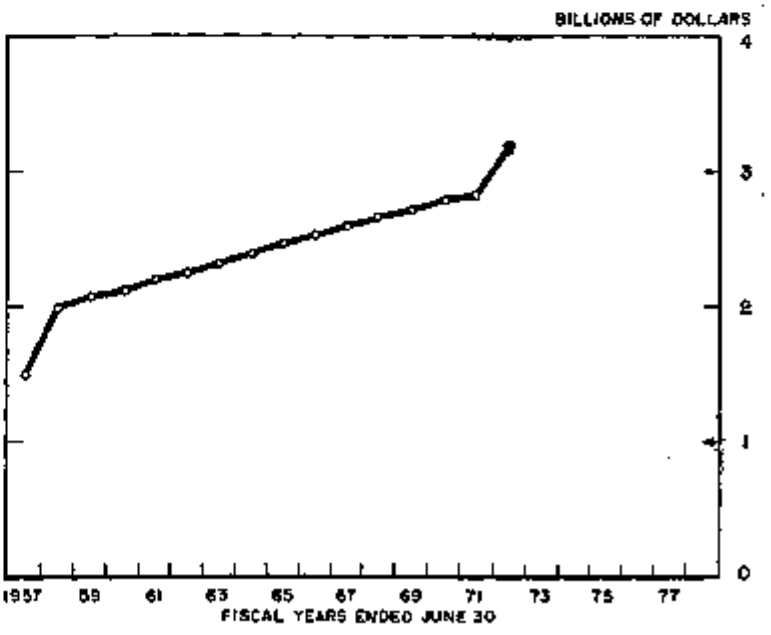
The new highways contain at once the potential for increased concentration of economic activity or dispersal. To the extent that commuting distance is a function of time required per trip, new areas farther out from the city center will be brought within range of effective commuting. Cross-commuting will be eased by use of inner and outer belt loops in the larger metropolitan areas. Already required to handle existing traffic volumes, the new urban superhighways will not solve the problem of congestion; by providing a measure of relief in the present situation, they could operate to increase the concentration of activity in the urban business district.

The cost of urban sections of the interstate network was placed at $15 billion excluding the unallocated 1,000 miles. This represents 55 percent of the estimated total cost of the Interstate System as compared with about 30 percent now being spent in urban areas. Urban expressways are enormously expensive both with respect to land and structures. Experience with comparable expressways which have been built in more than 50 large cities indicates that traffic tends to press upon capacity long before the date indicated by most advance estimates. Land preparation has generally involved large-scale demolition of commercial and residential property sometimes seriously reducing the tax base of the central city. In other cases, mass construction of large

Capital Outlays for Highways



Projected Federal Highway Trust Fund Receipts



Data: Outlays, Bur. of Pub. Roads; Receipts, BFB & U.S. Treas. Dept.

office buildings has resulted in additional economic concentration. The urban superhighway is an essential aspect of urban planning necessary to solve the problems of the motor vehicle in the metropolitan area.

State and local spending

In addition to expanding Federal funds for Federal-aid projects to be constructed by the State highway departments, the new law will have a number of consequences upon State and local budgets. Some further increase will take place in matching funds required of the States, but the rise will not be so rapid as in recent years. Between 1952 and 1956 annual matching requirements rose $300 million absorbing a considerable part of the increase in State funds available for roadbuilding. State aid to municipalities has also continued to rise.

Little further rise in State matching funds will be required for regular Federal aid through 1959. For the Interstate System, the annual increase in State matching funds will be larger in the next few years than in later years. This results from the requirement that 60–40 funds authorized prior to the 1956 act be expended before 90–10 funds, and from the acceleration of the program during the first few years. For the remainder of the program the required rise in State spending for interstate highways will be very gradual, resulting in a total annual expenditure of around $200 million toward the end of the program.

A few States are encountering difficulties in meeting matching fund requirements. For the country as a whole, however, large unmatched State funds have in the past been spent on construction of highways eligible for Federal aid. The substantial rise in Federal-aid funds on a 50–50 matching basis means an equivalent reduction in State funds required for the same volume of construction, or that this same money spent by the States will go twice as far.

More specifically, the building of non-toll roads along the interstate routes had previously been financed either by Federal-State funds on a 50–50 matching basis or entirely by State funds. Such outlays—which have been estimated at more than $2 billion since the routes were designated in 1947—will in the future be financed largely by the Federal Government.

Once the program expands with highway trust fund receipts the gradual increases in State matching funds for the Interstate System will be substantially smaller than the annual increment in State road-user taxes at present tax rates. More than half of the States have antidiversion, constitutional amendments which dedicate motor vehicle and gasoline taxes to highway purposes.

Impact of the Program

The general expansion in highway spending in the years ahead will have 2 separate though related types of influences.

The first is a relatively confined but direct expansionary effect upon the roadbuilding industry, its chief suppliers, and their work forces. The second is the more general indirect effects upon the economy resulting from the method of financing and the timing of the program.

Preliminary estimates of materials and equipment for the expanded roadbuilding program in the years ahead published by the Bureau of Public Roads are now being reexamined. For the Interstate System the requirement that most grade crossings be avoided means that bridges and cross-over structures will have a large place in the construction pattern. Thus materials requirements will be similar to those for toll roads, involving larger quantities of steel than that needed for other types of roads. The major supply problem expected to develop is for wide-flange structural shapes. Although the steel industry is planning increased capacity, more extensive use of reinforced concrete and other methods may be required. Because shortages are currently more serious for steel than for cement, this substitution has been noted on projects now under way.

Because of the gradual rise in construction expenditures anticipated, on-site and indirect labor requirements of materials and equipment producers will be spread over a long period. With increasing productivity, the proportion of skilled on-site construction workers may be expected to increase, as it has in the past. The Bureau of Public Roads states that increased productivity has reduced man-hour labor requirements by two-fifths over the past decade. Because of the large size of projects in the undertaking, the major personnel needs will be for engineers and for skilled machine operators. For the latter special training may be required. The chief hope appears to be in the direction of better utilization including the use of automatic devices in routine operations and calculations. The use of job breakdown, on-the-job training, upgrading and other devices used successfully during World War II will be helpful.

More general effects

The broader, more diffused effect of the new road program upon the whole economy involves both the method of financing of the road program and the rate of spending of the Federal-aid funds as well as related changes in State and local budgets. The indirect but pervasive effects upon the economy of the expansion in capacity in preparation for a long-term highway program will be partly offset in the next 2 years by a substantially larger hike in taxes collected than in spending under the new program. This will be balanced out by spending in excess of current trust fund collections in later years. Reduced borrowing for toll road construction will also have a restraining influence.

On the other hand, a section of the Highway Act providing for reimbursement of the Federal share for construction undertaken by the States in advance of fund allocations appears to have encouraged some States to obtain new borrowing authority in order to push ahead with high priority projects for the relief of highway and street congestion. In the November election a total of nearly $700 million in road bond issues was up for referendum, and almost all of the funds were approved.

Finally, the provision of the act that Federal financing of the new program be on a strict pay-as-you-build basis means that the expansion in Federal Government spending will be matched by increased tax collections with no Federal borrowing required for the highway program. Though an increase in Federal spending tends to increase total demand and output, the expansionary effect is mitigated by the increased tax take. On the basis of projected tax yields and costs, the self-financing provision will restrain the advance in spending for the interstate program a few years hence—after the initial surplus has been used up—and accordingly will lengthen the construction period of the program beyond the 13 years for which authorizations have been made.

403827°—56——4